The Rocket Blog

A blog about anything related to rockets and space technology from news to how to make your own propellant.

THURSDAY, JUNE 28, 2012

Requirements for the rocket's structure

The structure must be able to sustain the weight of the engine, the propellant and the payload, and the temperature produced by the drag at very high speed.

It is primarily built of lightweight yet strong enough material like aluminium. It is not uncommon to see steel used for the structure, particularly in heavy rockets.

The structure also house all the guidance electronics, the payload and the propellant tanks if the propellant is liquid or gaseous.

The body is profiled to avoid drag that is encountered when traveling at super- and hypersonic speeds in the atmosphere.

More drag equals more energy to be put in, so increasing propellant mass for no other purpose that compensating the drag experienced by the rocket.

In rocket and missile design, these requirements are primordial to optimize the rocket but in our model rocket, we will not care about them.

For the structure and the body, a hollow PVC or carboard paper tube will do the trick.

And the drag is negligible because the propellant will be exhausted before the rockets reach a high speed, avoiding issues of drag.

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